

# Sample proposals

## [Case Study]

### Digitizing Ipiranga Museum: Preserving Cultural Heritage through GIS and BIM

#### Description:

Want to learn more about how to preserve cultural heritage and memory within a scan-to-BIM process? This class is for you! We'll dive deep into the actual process used for digitizing Ipiranga Museum, located in Brazil's São Paulo, the twelfth most populous city in the world. A Brazilian history museum, Ipiranga Museum is a symbol of eclectic architecture and contains a vast collection of furniture, documents, and historically relevant artwork. Discover how to explore reality capture to generate and detail accurate models, including, in this case, both the Museum's Monument Building and Independency Park where it is situated. We'll cover the many potential integrations among ReCap Pro, Revit, Civil 3D, InfraWorks, and BIM 360 software, and demonstrate the ongoing results of this project. These are the first steps toward developing a digital twin for an existing historical asset, with the conclusion planned for 2022.

**Format:** Case Study

#### Learning objectives:

1. Apply digital tools, from reality capture to modeling of building and urban assets using a common data environment.
2. Identify the benefits of interoperability among macro/micro-scale tools through GIS and BIM workflows.
3. Explain the challenges from a scan-to-BIM process associated with historical buildings and step-by-step approaches.
4. Evaluate the variety of model uses that can be applied to this real case, such as 3D printing and gamification.

#### Summary:

In this case study of a museum site in Brazil, we will explore the potential of a scan-to-BIM process for preserving historical buildings.

**Outcomes:** Enable innovation

#### Topics:

AR, VR, XR, and Reality Capture, Document Management, Data Management, Cloud Collaboration, Building Information Modeling (BIM)

#### Keywords:

3D Modeling, Virtual Reality, Urban Design, Reality Capture, Operations and Maintenance (O&M), GIS, Collaboration, Architectural Visualization, Architectural Design

**Define your audience:** Business Leaders

**Audience occupation:** Government/Administration Professional, Executive/Senior Manager/Director, Business owner/entrepreneur, Technology/Innovation Manager

**Focus:** An industry or project case study

**Level:** Not Applicable (Content is not skills-based)

**Prerequisites:**

None required.

**Product(s):** Civil 3D, Revit, ReCap Pro, InfraWorks

**Industry segment:** Building Owners

**[Panel]**

**Transformational Change through Diversity and Inclusion**

**Description:**

A panel of leading industry experts in the fields of technology, design, and construction will share their stories and insights on how diversity and inclusion will drive transformational change for our industry. We'll focus on why diversity, equity, and inclusion (DE&I) are so important for your business and organization, how diversity and inclusion drive innovative results, and how leadership can directly play a role in cultivating a culture of equity and inclusion. The panelists will describe their personal journeys as minorities and share their stories of leading DE&I initiatives in their organizations and communities. Our panel aims to continue to bring awareness to challenges to improve diversity, and identify strategies for increasing DE&I. We will also discuss how to overcome resistance to change, what a potential road map to DE&I excellence could look like, and what the future of the AEC industry looks like with a more inclusive culture.

**Format:** Panel

**Learning objectives:**

1. Discover how to build an inclusive workplace.
2. Implement strategies to develop a road map for DE&I excellence.
3. Create opportunities for diversity in leadership roles.
4. Define how DE&I can bring transformational change to our industry.

**Summary:**

Learn how diversity, equity, and inclusion initiatives can drive transformational change in our organizations and the impact it has on the AEC industry.

**Outcomes:** Enable innovation, Gain general industry learning

**Topics:**

Convergence, Future of Work, Diversity, Equity, and Inclusion

**Keywords:**

Collaboration, Social Impact, Resilience

**Define your audience:** Business Leaders

**Audience occupation:** BIM/VDC manager, Teacher/faculty, Student, Executive/Senior Manager/Director, Construction Manager, Business owner/entrepreneur

**Focus:** Thought leadership and innovation

**Level:** Not Applicable (Content is not skills-based)

**Prerequisites:**

None required.

**Product(s):** None (Not Applicable)

**Industry segment:** Construction

## [Industry Talk]

### How Sustainability and Fusion 360 Can Help You Save Money and the Planet

#### **Description:**

With increasing pressure from consumers and regulations, manufacturers need to figure out how to produce more efficient products with reduced negative impact on the environment. Beyond reducing their pollution levels, organizations embracing sustainability save costs and are more competitive and innovative. In this class, we'll discuss the impact and opportunities of the major trends in sustainability for designers and manufacturers. Find out how you can use Fusion 360 software to drive efficiencies and innovation in your processes that will benefit your bottom line and the planet.

**Format:** Industry Talk

#### **Learning objectives:**

1. Define key sustainability trends, material and energy efficiency, circular economy, and governmental regulations.
2. Apply generative design for lightweighting, part consolidation, and sustainable material selection.
3. Implement nesting and AM support structure optimization for waste minimization.
4. Identify CAM workflows for machine energy efficiency.

#### **Summary:**

Learn techniques with Fusion 360 that can reduce costs while making more sustainable products with less impact and better material and energy efficiency.

**Outcomes:** Create more sustainable processes and results, Better manage or reduce costs, Enable innovation

#### **Topics:**

Additive Manufacturing, Automotive and Industrial Design, Digital Transformation, Generative Design, Sustainability

#### **Keywords:**

Automotive OEM, Energy Analysis, Circular Economy, Design for Manufacturing and Assembly (DfMA), Design Thinking, Digital Prototyping, Lean Manufacturing, Part Modeling, Sustainable Design

**Define your audience:** Managers

**Audience occupation:** BIM Manager, Business Owner/entrepreneur, Environmental engineer/designer, Executive/Senior Manager, Innovation Manager, Sustainability consultant

**Focus:** Exploring Industry practice and workflows

**Level:** Associate (Beginner)

#### **Prerequisites:**

Attendees should have a general understanding of their company's sustainability goals and economic pressures.

**Product(s):** Fusion 360, Inventor, Netfabb, Moldflow Adviser

**Industry segment:** Industrial Machinery

## [Technical Instruction] Design Automation for Structural Engineers

### **Description:**

In the structural engineering industry, one of the challenges is reducing manual and tedious design tasks. Computational design tools such as Dynamo software give structural designers, engineers, and detailers the opportunity to automate the creation of their deliverables to build structures with minimal energy. By doing so they spend less time on the repetitive tasks and more energy on the important parts of the design. In this class, you'll learn how Dynamo can support design automation and computational modeling workflows for structural analysis and design of concrete and steel structures. We'll also discuss the appropriate Dynamo packages used to perform automation in your own daily workflows, saving you time and money.

**Format:** Technical Instruction

### **Learning objectives:**

1. Apply automation techniques to your designs and daily workflows to save time and effort.
2. Identify the structural design automation packages in Dynamo.
3. Automate the placement of steel connections and rebar detailing in Revit.
4. Create automation scripts for analytical models.

### **Summary:**

Learn how Dynamo supports design automation and computational modeling workflows for structural analysis and design of concrete and steel structures.

**Outcomes:** Better manage or reduce costs, Raise technical competence, Increase operational efficiency

### **Topics:**

Automation, Building Information Modeling (BIM), Computational Design, Simulation and Analysis, Structural Engineering and Design

### **Keywords:**

Architectural Design, Building Services, Design Thinking, Engineering Services, Rendering, Structural Analysis, Structural Fabrication, Structural Simulation, Steel Detailing

**Define your audience:** Product Users

**Audience occupation:** Concrete detailer, Facilities manager, MEP engineer, Structural detailer, Structural engineer, Structural steel detailer

**Focus:** Exploring industry practice and workflows

**Level:** Professional (Intermediate)

### **Prerequisites:**

Basic knowledge and hands-on experience with Dynamo and Revit, and an understanding of computational modeling workflows for structural analysis and design of concrete and steel structures.

**Product(s):** Dynamo Studio, Revit, Robot Structural Analysis Professional

**Industry segment:** Building Engineering

## [Product Demo]

### Fusion 360 Multi-User Assembly Design Collaboration

**Description:**

As workforces become more distributed in a post-pandemic world, working together to design products as a team becomes much more challenging. Cloud-based products are removing many of the barriers to connecting and collaborating with remote team members. The cloud-connected capabilities of Fusion 360 are enabling users to step away from the office while maintaining connectivity with their teams with limited interruption in productivity. This demonstration will show how multiple team members can work simultaneously and remotely on a distributed assembly while avoiding common design conflicts. We will highlight new collaboration capabilities as well as advanced assembly design techniques that will help your company push ahead of the competition as businesses adapt to new ways of working.

**Format:** Product Demo**Learning objectives:**

1. Become proficient at distributed assembly design in Fusion 360.
2. Employ new features that enable collaborative workflows while avoiding design conflicts.
3. Adopt efficient ways to work with multiple team members on complex assemblies.
4. Avoid design conflicts while working collaboratively.

**Summary:**

A live demonstration of how Fusion 360 improves multi-user collaboration and design of distributed assemblies by a distributed team.

**Outcomes:** Improve collaboration, Grow or win new business, Raise technical competence**Topics:**

CAD Management, Product Design, Future of Work, Cloud Collaboration

**Keywords:**

3D Design, Design Thinking, Collaboration, Assembly Modeling, 3D Modeling

**Define your audience:** Product Users**Audience occupation:** CAD manager, Product/prototype designer, Product Engineer, Mechanical detailer, Mechanical Engineer, Machinist**Focus:** Going beyond software basics**Level:** Professional (Intermediate)**Prerequisites:**

A desire to work collaboratively with other people in your company or project. One or more years of experience working with Fusion 360 with some knowledge of distributed assemblies (XRef components) is helpful.

**Product(s):** Fusion 360, Fusion Team**Industry segment:** Industrial Machinery

## [Roundtable Discussion] Management Skills in the AEC Industry

### **Description:**

As technical professionals we spend years in school, then years studying for licensing exams. And we spend our entire careers poring over code books and technical manuals. By the time we reach management positions, we're technical experts and excellent project managers...but we never learned how to manage people. As it turns out, soft skills are just as important as technical skills. This session will offer a forum to discuss various tips and techniques that will help us all improve our management skills. During this roundtable, we'll share and discuss experiences, successes, and failures as managers. We'll share resources and have an open discussion, so we can all learn from each other. Everyone must find their own management style, and undoubtedly along the way you'll discover that the bottom line is this: We are all just people . . . wouldn't it be easier if we were numbers!

**Format:** Roundtable Discussion

### **Learning objectives:**

1. Engage in an open discussion to listen to and learn from each other.
2. Discuss various tips and techniques to be a better manager.
3. Share real-world experiences including successes and failures as managers.
4. Explore different management approaches and which works best.

### **Summary:**

This open discussion is on management skills and techniques that will help anyone be a better manager. Soft skills are as important as technical skills!

**Outcomes:** Enable innovation, Improve collaboration, Provide healthier and safer environments

### **Topics:**

Project Management, CAD Management, IT Management, Facilities Management, Field Management

### **Keywords:**

Production Management

**Define your audience:** Managers

**Audience occupation:** BIM Manager, CAD Manager, VDC Manager, IT Manager, Production & Operations Manager, Technology/Innovation Manager

**Focus:** Thought leadership and innovation

**Level:** Not Applicable (Content is not skills-based)

### **Prerequisites:**

You should be a manager with direct reports to participate and get the most out of this discussion.

**Product(s):** None (Not Applicable)

**Industry segment:** Architecture